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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,890	07/01/2005	Peter Persoone	016782-0327	9698

22428 7590 05/29/2009

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EXAMINER	
XU, LING X	

ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
05/29/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/533,890	PERSOONE ET AL.	
	Examiner	Art Unit	
	Ling Xu	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4 and 7-12* is/are pending in the application.

4a) Of the above claim(s) *10 and 11* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-9 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker et al. (US 5,593,786) in view of Miyazaki et al. (US 5,419,969).

Parker discloses a laminated glazing unit comprising a first glass sheet, a support layer with a plastic adhesive layer on both of the major surfaces of the support layer, and a second glass sheet (col. 3, lines 10-30). Parker also discloses that the laminated glazing unit is used for automobiles, air planes, and building (col. 1, lines 25-30).

Parker does not disclose that one of the glass sheet coated with an infrared reflecting coating.

Regarding claims 1-3, Miyazaki teaches a multilayered infra-red reflecting coating formed on a glass substrate wherein the coating is comprised of alternating layers of oxide films and Ag films (column 2, lines 3-15). Miyazaki also teaches that the Ag films will exfoliate from the oxide film at the interface of the Ag and oxide films, (column 3, lines 31-40). In order to improve adhesion at the interface, an interstitial (intermediate) layer is formed of a material such as gold (column 7, lines 45-59). The

interstitial layer can be formed on both sides of the interface between the Ag film and the oxide film (col. 7, lines 36-40). The oxide film can be TiO2 (col. 8, lines 15-20). As the coated substrate comprising the same layered structure as claimed, the same layered structure would also have the same properties such as those recited in claims 1-2.

Regarding claims 7-8, Miyazaki teaches that the silver layers have a thickness of 100A (10nm) (col. 4, lines 40-45) and the oxide layers have a thickness of 200-700 A (20-70nm) (col. 8, lines 65-67).

Regarding claim 9, Miyazaki teaches that the layered structure can be used as a heat mirror (col. 1, lines 18-22).

Miyazaki also teaches that the glass with the infrared reflecting coating can provide low emissivity functions including preventing lowering of room temperature by reflecting the thermal infrared radiation emitted from within a heated room, which is mainly used in cold temperature in a form of double glazing for the purpose of decreasing heating load. The coated glass may also be adopted in a windshield of an automobile in a form of laminated glass (col. 1, lines 15-35).

Therefore, it would have been obvious to one of ordinary skill in the art to apply the infrared reflecting coating on one of the glass substrate of Parker's laminated glazing unit used for automobiles, air planes, and building in order to provide low emissivity functions to the automobiles, air planes, and building, as suggested by Miyazaki.

2. Claims 4 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parker and Miyazaki, as applied to claim 1 above, and further in view of Okimura ("Low Temperature Growth Of Rutile TiO2 Films In Modified Rf Magnetron Sputtering", *Surface and Coatings Technology*, V.135, Issues 2-3, 2001, P 286-290).

As stated above, the combination of Parker and Miyazaki discloses the same layered structure as recited in claim 1.

Miyazaki also discloses the oxide layer comprising TiO2 (TiOx, when x is 2) but does not specify that the TiO2 is in rutile form. However, it is well known in the art that titanium dioxide is manufactured in two crystal forms: anatase and rutile. The rutile form of titanium dioxide has a higher reflective index than the anatase form and as a result, the rutile form will have greater reflectivity than the anatase form. Therefore, it is more desirable to use the high reflective index rutile form of titanium dioxide in an infra-red reflecting layered structure.

Okimura teaches that titanium dioxide TiO2 is used for optical coatings due to its high refractive index. The rutile TiO2 which is known to have a high temperature stable phase has a higher refractive index, 2.72, than that of anatase TiO2 2.52, at a wavelength of 500 nm (page 286, column 1).

Therefore, it would have been obvious to one of ordinary skill in the art to use rutile form of titanium dioxide as a metal oxide layer in the layered structure disclosed by Parker and Miyazaki in order to provide a high temperature stable and high reflective index metal oxide layer.

It should be noted that claim 12 is a product-by-process claim. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In this case, the combination of Miyazaki and Okimura discloses the same product as claimed, the combination of Miyazaki and Okimura meets the claimed product limitations even through the TiO2 product disclosed by Okimura is made by a different process (i.e. the radio frequency magnetron sputtering process).

Response to Arguments

3. Applicant's arguments filed on 4/22/2009 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling Xu whose telephone number is 571-272-7414. The examiner can normally be reached on 8:00 am- 4:30 pm, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ling Xu
Primary Examiner
Art Unit 1794

/Ling Xu/
Primary Examiner, Art Unit 1794

Lx
May 27, 2009